IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES
Docket No. 13435US04

IN THE APPLICATION OF:

Afghahi, et al.

SERIAL NO.: 10/795,825

FILED: March 8, 2004

FOR: SINGLE-ENDED SENSE AMPLIFIER WITH SAMPLE-AND-HOLD REFERENCE

ART UNIT: 2816

EXAMINER: Kenneth B. Wells

Conf. No.: 2778

Electronically Filed on November 22, 2010.

BRIEF ON APPEAL

Mail Stop: Appeal Brief-Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

This is an appeal from an Office Action dated June 22, 2010, in which claims 9 and 10 were finally rejected.

REAL PARTY IN INTEREST

Broadcom Corporation, a corporation organized under the laws of the state of California, and having a place of business at 5300 California Avenue, Irvine, California 92617, has acquired the entire right, title and interest in and to the invention, the application, and any and all patents to be obtained therefor, as set forth in the Assignment recorded at Reel 011826, Frame 0018 in the PTO assignment search room.

RELATED APPEALS AND INTERFERENCES

There currently are no appeals pending regarding related applications.

STATUS OF THE CLAIMS

Claims 9 and 10 are pending in the present application. Pending claims 9 and 10 stand rejected and are the subject of this appeal.

STATUS OF THE AMENDMENTS

The Appellant has not amended any claims subsequent to the final rejection of claims 9 and 10 mailed on June 22, 2010.

SUMMARY OF CLAIMED SUBJECT MATTER

Claim 9 is directed to a method of measuring an input signal using a single-ended sense amplifier. Pursuant to the method, a voltage present at an input node is sampled a predetermined interval before measurement of the input signal is initiated. The sampled voltage is held at a reference node as a reference voltage. At the predetermined interval after sampling the voltage present at the input node, the input signal at the input node is measured by sampling the input signal and comparing it to the reference voltage.

The invention of claim 1 is described in the Specification of the present application at, for example, page 33, line 25 - page 34, line 23, referring to Figure 10. FIG. 10 illustrates a single-ended sense amplifier 1000 with a sample-and-hold reference.[1] As described at page 33, line 32 – page 34, line 13, the voltage present at the input node 1004 is sampled a predetermined interval before measurement of the input signal is initiated. The sampled voltage is held at a reference node 1021 as a reference voltage. At the predetermined interval after sampling the voltage present at the input node 1004, the input signal at the input node 1004 is measured by sampling the input signal and comparing it to the reference voltage. The invention of claim 9 is also described in the Summary of the Invention section at page 4, lines 3-13.

[1] Specification, page 33, lines 29-31.

Claim 10 is dependent upon claim 9.

GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

I. Claims 9 and 10 stand rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent 5,477,481 ("Kerth").

ARGUMENT

I. Claims 9 and 10 are not anticipated under 35 U.S.C. § 102(b) by Kerth (US 5,477,481).

In the Office Action of June 22, 2010, claims 9 and 10 were rejected under 35 U.S.C. § 102(b) as being anticipated by Kerth (US 5,477,481). 35 U.S.C. 102(b) states:

> A person shall be entitled to a patent unless… the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.[2]

To anticipate a claim, the reference must teach every element of the claim. "A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference."[3]

Claim 9 is directed to

> 9. A method of measuring an input signal using a single-ended sense amplifier, the method comprising:
>
> sampling a voltage present at an input node a predetermined interval before measurement of the input signal is initiated;
>
> holding the sampled voltage at a reference node as a reference voltage; and
>
> at the predetermined interval after sampling the voltage present at the input node, measuring the input signal at the input node by sampling the input signal and comparing it to the reference voltage.

The Examiner asserts that claims 9 and 10 are anticipated by Figure 4A of Kerth. The Examiner asserts that the operation when the voltage at the top input terminal (where VINP is received) is transferred to the left plate of the top capacitor C1, i.e., when the top switch ΦA closes, constitutes the "sampling a voltage present at input node" per claim 9. The Examiner further asserts that the resulting storage of charge on the top capacitor C1 in response to the top switch ΦA, and the other ΦA switch connected to the right plate of C1, closing constitutes the "holding the sampled voltage at a reference node as a

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[2] 35 U.S.C. § 102(b)

[3] *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987).

reference voltage" per claim 9. Thus, the Examiner deems the "input node" of claim 9 to be the terminal receiving VINP, i.e., the left terminal of switch ΦA. The Examiner further deems the "reference node" of claim 9 to be the node at the left side of C1. The Examiner goes on to allege that the operation when the ΦA switches open and the ΦB switches close constitutes the "measuring the input signal at the input node by sampling the input signal and comparing it to the reference voltage" per claim 9. Applicant strongly disagrees. First of all, when the ΦA switch opens, the terminal receiving VINP (which the Examiner deems to be the input node per claim 9) is cut off from the rest of the circuit. Therefore, the opening of the ΦA switch cannot constitute measuring the input signal (VINP) at the input node by sampling the input signal and comparing it to the reference voltage, per claim 9. Also, closing the ΦB switch admits the signal that existed at the right side of capacitor C1 to the + terminal of the differential chopped amplifier 48, but in no conceivable way does that result in a comparison of that signal to the VINP signal present at the input node. Even if the opening of the ΦA switch did not cut off the input signal VINP from the rest of the circuit (it does), at best the result would be a serial provision of successive signals to the + terminal of the differential chopped amplifier 48, which obviously does not result in a comparison of such successive signals. Thus it is clear that Kerth fails to anticipate claim 9.

II. The objections to the Specification should be withdrawn

On page 2 of the Office Action mailed on June 22, 2010, the specification was objected to. Although the Board of Appeals does not review objections, Appellant submits that the objections to the specification should be withdrawn. The Examiner says that the reference numbers 1010 and 1011 appear to be incorrect because they refer to the same node in Figure 10. Appellant disagrees. These reference numbers are not actually referring to a node, per se. They are actually referring to two separate inputs. The fact that these two inputs are coupled to the same node does not preclude the use of two different reference numbers for the two different inputs. Appellant also disagrees that reference number 1002 on page 34, line 8, of the specification should be changed to 1021.

III. Conclusion

For at least the foregoing reasons, Appellant submits that claims 9 and 10 are not anticipated by Kerth. Reversal of the Examiner's rejection and issuance of a patent on the application are therefore requested.

The Commissioner is hereby authorized to charge $540 (to cover the Brief on Appeal Fee of $540) and any additional fees or credit any overpayment to the deposit account of McAndrews, Held & Malloy, Ltd., Account No. 13-0017.

Dated: November 22, 2010

Respectfully submitted,

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APPENDIX

(37 C.F.R. § 1.192(c)(9))

The following claims are involved in this appeal:

9. A method of measuring an input signal using a single-ended sense amplifier, the method comprising:

sampling a voltage present at an input node a predetermined interval before measurement of the input signal is initiated;

holding the sampled voltage at a reference node as a reference voltage; and

at the predetermined interval after sampling the voltage present at the input node, measuring the input signal at the input node by sampling the input signal and comparing it to the reference voltage.

10. `The method of claim 9 wherein sampling the voltage present at the input node comprises activating a sampling circuit a predetermined interval before measurement of the input signal is initiated.

EVIDENCE APPENDIX

Not applicable.

RELATED PROCEEDINGS APPENDIX

The Appellant is unaware of any related appeals or interferences.